

Filed on behalf of: AX Wireless, LLC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION,
Petitioner,

v.

AX Wireless, LLC,
Patent Owner.

Case IPR2023-01146
Patent No. 11,212,146

**PATENT OWNER'S
PRELIMINARY RESPONSE**

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Exhibit List

Exhibit	Description
2001	Declaration of Zygmunt Haas, Ph.D. (“Haas” or “AXW-2001”)
2002	<i>Curriculum Vitae</i> of Zygmunt Haas, Ph.D. (“AXW-2002”)
2003	U.S. Patent Application Publication No. 2012/0170625 (“2012 Publication” or “AXW-2003”)
2004	International Patent Application No. PCT/US2010/046088 (“2010 Application” or “AXW-2004”)
2005 - 2016	RESERVED
2017	Third Amended Docket Control Order, <i>AX Wireless LLC v. Dell Inc.</i> , No. 2:22-cv-00277 (E.D. Tex. Oct. 23, 2023), ECF No. 136 (“AXW-2017”)
2018	Third Amended Docket Control Order, <i>AX Wireless LLC v. Lenovo Grp. Ltd.</i> , No. 2:22-cv-00280 (E.D. Tex. Oct. 31, 2023), ECF No. 130 (“AXW-2018”)
2019	RESERVED
2020	<i>Time to Milestones – Judge Robert W. Schroeder, III: Case Filing Date: On or After Jan. 1, 2008</i> , Docket Navigator (“AXW-2020”)
2021	Civil Docket, <i>AX Wireless LLC v. Dell Inc.</i> , No. 2:22-cv-00277 (E.D. Tex.) (through Dec. 7, 2023) (“AXW-2021”)
2022	Civil Docket, <i>AX Wireless LLC v. Lenovo Grp. Ltd.</i> , No. 2:22-cv-00280 (E.D. Tex.) (through Dec. 7, 2023) (“AXW-2022”)

Exhibit	Description
2023	Defendants' P.R. 3-3 Invalidity Contentions and Ineligibility Contentions, <i>AX Wireless LLC v. Dell Inc. & HP Inc.</i> , Nos. 2:22-cv-00277, 2:22-cv-00279 (E.D. Tex. Jan. 23, 2023 [served]) ("AXW-2023")
2024-2030	RESERVED
2031	[Proposed] Fourth Amended Docket Control Order, <i>AX Wireless LLC v. Dell Inc.</i> , No. 2:22-cv-00277 (E.D. Tex. Dec. 1, 2023), ECF No. 153-1 ("AXW-2031")
2032	Memorandum Order Denying Dell's Motion to Transfer, <i>AX Wireless LLC v. Dell Inc.</i> , No. 2:22-cv-00277 (E.D. Tex. Nov. 12, 2023), ECF No. 142 ("AXW-2032")

I. Introduction

Intel's Petition aims to end-run around the Board's statutory authority under 35 U.S.C. § 311 to determine patentability based "prior art consisting of patents or printed publications," by arguing that the claims of the '146 patent lack written description support in the '146 patent specification. Intel guises this § 112 attack as an attempt to sever priority. But there too, Intel's priority arguments are weak on the merits. Intel's position turns exclusively on a flawed claim construction of the term "detecting, from the received wireless packet, the second header field which repeats the first header field," that would exclude any detection accomplished by decoding information in a packet header. Such a construction, however, violates the basic tenet of claim construction that claims should not be construed to exclude a preferred embodiment. Intel's priority argument is further undermined by the fact that its asserted references, Huang and Sun, both contemplate decoding of a packet header as a means to detect a repeated header. Because Intel cannot show that the '146 patent is not entitled to the filing dates of its ancestral applications (in 2009, 2010, or 2012), neither Huang nor Sun qualify as prior art.

II. Background

A. The '146 Patent (INTEL-1001)

The '146 patent claims priority from U.S. Provisional Application No. 61/235,909, which was filed on August 21, 2009. The '146 patent further claims priority from U.S. Patent Application Nos. 16/780,589 (filed Feb. 3, 2020),

16/394,490 (filed Apr. 25, 2019), 16/125,206 (filed Sept. 7, 2018), 15/958,519 (filed Apr. 20, 2018), 15/476,284 (filed Mar. 31, 2017), 15/350,418 (filed Nov. 14, 2016), 13/376,856 (filed Feb. 8, 2012), and PCT/US2010/046088 (the “2010 Application”) (filed Aug. 20, 2010).

The '146 patent describes using various header repetition techniques across multiple, overlapping frequency bands in a wireless OFDM network and receiver detection of various packet formats with repeated headers. INTEL-1001, Abstract, claim 1. It explains that “[c]onventional multi-user communications system[s] use frame-based (or packet-based) transmission to communicat[e] between two or more users over a shared channel based on Orthogonal Frequency Division Multiplexing (OFDM) A packet is usually formed by a preamble, header, and payload, and transmitted using time-sharing or contention-based media access methods.” INTEL-1001, 1:40-47. Figure 1 of the '146 patent illustrates “various header repetition schemes” consistent with the teachings of the '146 patent.

The '146 patent describes using various header repetition techniques across multiple, overlapping frequency bands in a wireless OFDM network and “auto-detecting” various packet formats with repeated headers. INTEL-1001, Abstract, claim 1. It explains that “[c]onventional multi-user communications system[s] use frame-based (or packet-based) transmission to communicat[e] between two or more users over a shared channel based on Orthogonal Frequency Division Multiplexing

(OFDM) A packet is usually formed by a preamble, header, and payload, and transmitted using time-sharing or contention-based media access methods.” INTEL-1001, 1:26-35. Figure 1 of the '146 patent illustrates “various header repetition schemes” consistent with the teachings of the '146 patent:

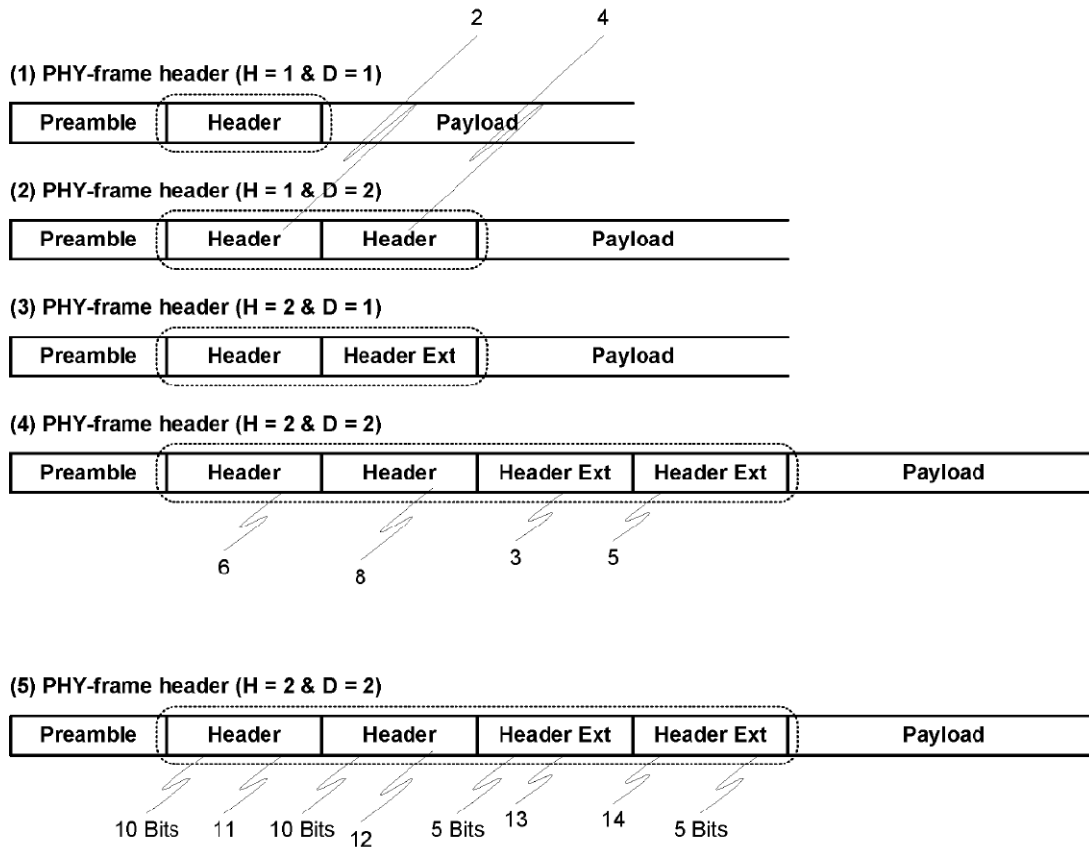


Fig. 1

Id. 2:37-45; *see also id.* 5:56-6:19. It further describes various ways of communicating header repetition schemes so that various nodes are aware of the scheme being used. *See, e.g., id.* 2:51-3:67.

The '146 patent emphasizes that an aspect of its invention “is directed to receiver detection of D with variable repetition,” which allows its wireless receiver

be able to distinguish between various packet formats, and thus decode packet formats, “without knowing D [the number of OFDM symbols] a priori (i.e., prior to decoding the packet header).” *Id.* 2:51-64. In another embodiment, the specification describes that upon receipt of a packet, the receiver receives “starts processing the header by decoding one OFDM header symbol.” *Id.* 3:1-2. If successful, “then the receiver knows how many more OFDM symbols (D-1) are carrying header information for a given frame,” and thus distinguishes the packet type received. *Id.* 3:2-5. This process allows for the receiver to distinguish between various packet formats based on the presence of a “second header field, which repeats the first header field.” *Id.* claim 1.

The specification describes several other exemplary ways that the packets can be distinguished. In one embodiment, a domain master can select or determine a D value per the transmission opportunity (TXOP) “depend[ing] on the number of available sub-carriers (and/or the bandwidth) of the bandplan the transmitter/transceiver operates on and/or the receiver(s) operates on.” *Id.* 3:46-54, 8:54-9:4, Fig. 4. Using a bit field in the second header field, a value for D can be encoded. *Id.* 8:63-67. The receiver, upon receipt of the packet, can distinguish the

patent type as “the value of D is decoded from a bit field in the header of the second frame.” *Id.* 9:15-24, Fig. 5.¹ Such a process is depicted in Figure 5:

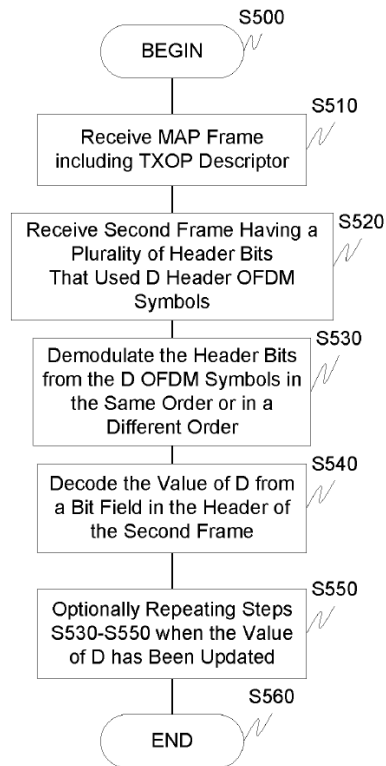


Fig. 5

INTEL-1001, Fig. 5. The '146 patent also expressly notes that its claims are intended to embrace not only the exemplary embodiments, but also “many alternatives,

¹ In summarizing the '146 patent, Intel asserts that the language of claim 1 does not require detecting the second packet format by signaling the value of D, Pet. 5, but claims need not be limited “the only embodiments, or all of the embodiments.” *See Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1359 (Fed. Cir. 2016) (internal quotation marks and citations omitted).

modifications and variations” that “would be or are apparent to those of ordinary skill in the applicable arts.” *Id.* 12:42-50.

B. Person of Ordinary Skill in the Art

For purposes of this Preliminary Response, Patent Owner does not contest the level of ordinary skill proposed by Intel but reserves the right to do so. Pet. 6.

III. Intel's Written Description Challenge Is Barred by 35 U.S.C. § 311

Inter partes review proceedings are limited to “ground[s] that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications.” 35 U.S.C. § 311; *Straight Path IP Grp., Inc. v. Sipnet EU S.R.O.*, 806 F.3d 1356, 1363 (Fed. Cir. 2015) (recognizing that § 311 bars written description and enablement challenges).

Intel asks the Board to break the '146 patent's chain of priority by finding that the claims of the '146 patent lack written description support in the “2010 application,” from which it claims priority. Pet. 9 n.2. But Intel does not cite to any portions of the 2010 application—it is not even appended as an exhibit to Intel's Petition nor was reviewed by its expert. *See* INTEL-1003, 103 (“Attachment A”). Instead, Intel argues that the claims of the '146 patent lack written description support in its own specification—the quintessential § 112 analysis. *See id.* 15-19. Intel's only justification for shortcutting its analysis is its assertion that the '146 patent shares a common specification with its ancestor applications. *Id.* 9 n.2. But

by not comparing the claims of the '146 patent to any patent application in the chain of priority, Intel is asking the Board to simply invalidate the claims of the '146 patent for lack of written description support under § 112 in violation of § 311. Intel cannot point to any precedent from the Board or the Federal Circuit authorizing such an end-run around § 311, in the guise of a priority challenge, in which the Board must compare the claims of a patent to look for written description support in the challenged patent's own specification. The Board should thus decline to do so.

That Intel's § 112 challenge exceeds the scope of the Board's authority is underscored by the fact that its written description challenge requires the Board to glean a claim construction from Patent Owner's Preliminary Infringement Contentions from the parallel District Court actions. Pet. 12-15. These contentions, however, were based purely on publicly available information and are subject to amendment and supplementation. *See generally* INTEL-1007 at 1 (noting that Patent Owner had not yet received any "confidential, proprietary, or non-public information or documents that describe the accused instrumentalities, or discovery on [Dell's] last, discontinued, or other instrumentalities reasonably similar to the presently accused instrumentalities.")). In other words, Intel is asking the Board to use infringement contentions served early in the litigation to draw a conclusion about claim scope, and then find no written description support for such claim scope in the

specification of the '146 patent itself. *See* Pet. 12-15. Intel's ask far exceeds the Board's scope of authority under § 311.

IV. Huang (INTEL-1005) and Sun (INTEL-1006) Are Not Prior Art

Intel asserts that both U.S. Patent No. 10,637,706 to Huang et al. ("Huang") and U.S. Patent No. 10,122,563 to Sun et al ("Sun") are pre-AIA § 102(b) prior art, based on its general contention that the '146 patent does not have written description support in any of its priority applications. Pet. 1-2, 7. Intel is wrong. Because the '146 patent's chain of priority is intact and provides written description support for the challenged claims, neither Huang nor Sun qualify as prior art.

A. The '146 Patent is Entitled to Its Full Chain of Priority Under 35 U.S.C. § 120

The Petition argues that the '146 patent cannot claim priority from its ancestral 2010 Application (PCT/US2010/046088) because "none of the alleged priority applications disclose a receiver that distinguishes packet formats based on detecting the repetition of a header field in received packets." Pet. 9. Intel, however, failed to even append the 2010 application as an exhibit to its Petition, let alone meet its burden of persuasion to show that the '146 patent is not entitled to claim priority to its ancestral applications.

The Petitioner holds the ultimate burden of persuasion under 35 U.S.C. § 316(e) to show unpatentability, "and that burden never shifts to the patentee." *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir.

2015); *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1375-78 (Fed. Cir. 2016). Nonetheless, the Board has determined that when a patent's claim to a specific priority date is challenged, the "patentee must demonstrate that the claims meet the requirements of 35 U.S.C. § 120, which include fulfilling the requirements of § 112." *Penumbra, Inc. v. RapidPulse, Inc.*, IPR2021-01466, Paper 34 at 18 (Mar. 10, 2023) (precedential) (internal quotation marks omitted and citing *In re NTP, Inc.*, 654 F.3d 1268, 1276-77 (Fed. Cir. 2011)).

Under § 112(a), an inventor is "free to draft [the claims] broadly," as long as "a skilled artisan would reasonably conclude, based on the patent's disclosures and the knowledge of a person skilled in the art, that the applicant possessed [the claimed invention]." *Medtronic, Inc. v. Teleflex Innovations S.a.r.l.*, 69 F.4th 1341, 1354 (Fed. Cir. 2023) (quoting *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010)). However, "the absence of embodiments" does not "preclude written description." *Id.* (citing *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 93 F.3d 1572, 1582 n.7 (Fed. Cir. 1996)). Indeed, "that a claim may be broader than the specific embodiment disclosed in a specification is in itself of no moment." *In re Rasmussen*, 650 F.2d 1212, 1215 (CCPA 1981).

1. Intel's Priority Challenge Depends on an Erroneous Claim Construction of "Detecting"

Although Intel contends that no claim construction is "necessary ... for the purpose of this IPR proceeding," Pet. 6, Intel advances a thinly veiled construction

for the term “detecting, from the received wireless packet, the second header field which repeats the first header field” as recited in independent claims 1 and 6 to be limited to “determining whether the two symbols” in a packet “are the same.”

Pet. 15. In other words, Intel contends that the “detecting” step in claims 1 and 6 of the '146 patent requires “the receiver to distinguish packet formats by detecting the existence of a repeated header field,” (Pet. 17) but excludes accomplishing this “by decoding the packet to obtain” the number of OFDM symbols (Pet. 16). Intel's reason for its construction is because it is purportedly “consistent with PO's allegations in district court.” Pet 15. But Intel's construction lacks support in the intrinsic record and would drastically and improperly narrow the scope of the claims to exclude preferred embodiments of the '146 patent. Intel's construction, which is improperly advanced “with the goal of arriving at a particular priority date,” should thus be rejected. *See X2Y Attenuators, LLC v. Int'l Trade Comm'n*, 757 F.3d 1358, 1365 (Fed. Cir. 2014) (Reyna, J., concurring); *Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555 (Fed. Cir. 1995) (recognizing that the adjudicating tribunal “has an independent obligation to determine the meaning of the claims, notwithstanding the views asserted by the adversary parties”).

First, the plain language of the claims does not require determining whether two symbols in a packet are the “same,” as Intel advances. *See* Pet. 15. Nowhere is such limiting language present in the claims. Intel in fact concedes, the plain

language of the claims requires only “detecting the existence of a repeated header field,” and such that the “receiver differentiates between packet formats.” Pet. 17-18.² As such, nothing in the claim language itself limits or defines this “detecting” to require assessing whether two symbols in a packet “are the same.” *See* Pet. 15. Intel further argues that claims should be read to exclude any means of “detecting the existence of a repeated header field,” that would involve decoding of a header field to distinguish between packet formats. Pet. 15-18. But again, nothing in the plain language of the claims expressly excludes the decoding of a header field as one way to detect a second header field, and thereby distinguish between packet formats. *See* INTEL-1001, claims 1, 6. Absent any such disclaimer or disavowal, the “detecting” term should be given its full scope. *Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc.*, 853 F.3d 1272, 1281 (Fed. Cir. 2017) (“It is axiomatic that we will not narrow a claim term beyond its plain and ordinary meaning unless there is support for the limitation in the words of the claim, the specification, or the prosecution history.” (quoting *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1333 (Fed. Cir. 2013))); *Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012) (“The patentee is free to choose a broad term and expect to

² Intel does not argue that this is a means-plus-function claim, or that pre-AIA 35 U.S.C. § 112(f) should apply.

obtain the full scope of its plain and ordinary meaning unless the patentee explicitly redefines the term or disavows its full scope.”); *see also* AXW-2001, ¶34.

At best, Intel argues that the use of the word “decoding” in dependent claims 4 and 9, which require that the header fields “contain information for decoding the wireless packet,” indicate that “detecting” and “decoding” are not synonymous under the doctrine of claim differentiation. Pet. 18. But Patent Owner is not equating the “detecting” and “decoding,” but rather asking the Board to recognize that the term “detecting” has a broader plain and ordinary meaning that would not exclude identifying the existence of the second header field by decoding the value D (i.e., the number of OFDM symbols) or other information in a header field.

In addition, in trying to distinguish the term “decoding” recited in claim 4 and “detecting” recited in claim 1, Intel misapplies the doctrine of claim differentiation, which recognizes that “each claim in a patent is presumptively different in scope” such that a limitation in a dependent claim should not be read into an independent claim. *See Ecolab Inc. v. Paraclipse, Inc.*, 285 F.3d 1362, 1375-76 (Fed. Cir. 2002) (internal quotation marks and citation omitted); *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004) (“[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim.”). Here, Intel does not argue, and there can be no dispute, that claim 4 (which requires the header fields to include “information for

decoding the wireless packet,” i.e., the data packet) is different in scope than independent claim 1, even if the Board adopts Patent Owner’s construction in which “detecting” encompasses “decoding.”

Second, the specification is conclusive that “detecting” the repeated second header field encompasses decoding the value of D in a header field. The specification explicitly describes that “[one] exemplary aspect is directed toward *receiver detection of D with variable repetition*,” such that “a receiving node in the domain should be able to decode packets sent by the transmitter without knowing D a priori (i.e. prior to decoding the packet header).” INTEL-1001, 2:51-64 (emphasis added). *See id.* In another embodiment, the receiver distinguishes between packet formats by “decoding one OFDM header symbol,” which if successful, “then the receiver knows how many more OFDM symbols (D-1) are carrying header information for a given frame.” *Id.* 3:1-5. But even where the receiver is unable to determine the value of D header field, it can still detect and decode additional OFDM header symbols. *Id.* 3:5-11; *see also* AXW-2001, ¶35.

In other words, the specification describes various embodiments in which the receiver is able to distinguish different packet types without knowing D “a priori,” as well as embodiments that involve “detecting ... a second header field which repeats the first header field” by decoding D from a header field. *Id.* 2:51-64, 3:1-

11; *see also id.* 9:8-24, Fig. 5.³ As such, Intel's contention that "a POSITA would understand detection and decoding to be two different processes disclosed in the '146 patent," (Pet. 17) is not borne out in the specification, which expressly considers "receiver detection" to encompass decoding OFDM header symbols from a received header field to detect the presence or absence of a repeated header field to distinguish between packet formats. INTEL-1001, 2:51-3:11; AXW-2001, ¶35. Adopting Intel's construction would thus violate a key tenet of claim construction by excluding a preferred embodiment. *See Sisvel Int'l S.A. v. Sierra Wireless, Inc.*, 81 F.4th 1231, 1236 (Fed. Cir. 2023) ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments." (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005))).

Third, the prosecution history lends support for Patent Owner's construction. The provisional application from which the '146 patent claims priority, U.S. Application No. 61/235,909 (the "'909 Provisional"), describes "Detection by receiver" of the value of D (the number of OFDM symbols, and thus packet type),

³ Intel even admits that the specification discloses that the receiver is able to "distinguish between packet formats ... by decoding the packet to obtain the value of D." Pet. 16.

by “processing the header by decoding one OFDM header symbol,” which if successful, then the receiver “knows how many more OFDM symbols (D-1) carrying header information for a given frame.” INTEL-1008, 5-6 (“Detection by receiver (variable repetition)”). Thus, consistent with the specification, the prosecution history supports construing the “detecting” term to not exclude decoding the value of D, or other information, from a header field to distinguish between packet formats. *See* AXW-2001, ¶36.

Intel is unable to point to any supporting law for its proposition that claims should be narrowed based on Intel's interpretation of the Patent Owner's infringement contentions, as Intel aims to do here. *See* Pet. 15 (arguing that Patent Owner's preliminary infringement contentions require a construction for repetition detection based on “determining whether the two symbols ... are the same”). But infringement contentions served early in a case are typically underdeveloped and are at most considered extrinsic evidence, which is “secondary to the intrinsic evidence,” and not required to construe this term. *See Grace Instrument Indus., LLC v. Chandler Instruments Co.*, 57 F.4th 1001, 1008, 1010 (Fed. Cir. 2023) (rejecting use of extrinsic evidence to alter the scope of the claims). Intel also asks the Board to make inferences about the operations of the IEEE Std. 802.11a-1999 and IEEE Std. 802.11ax standards but fails to even append these standards as exhibits to its Petition. Pet. 13-15. It is Petitioner's burden, not the Board's or Patent Owner's, to

ensure that the Petition is supported by evidence. *See* 35 U.S.C. § 316(e) (“[T]he petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence.”).

The Board should thus reject Intel’s improper attempt to narrow claim scope with respect to the term “detecting,” and permit Patent Owner to “obtain the full scope of its plain and ordinary meaning.” *Thorner*, 669 F.3d at 1367.

2. Intel’s Erroneous Construction Is Further Undermined by Its Prior Art Challenges

Intel’s construction is further undermined by its own descriptions and reliance on the Huang and Sun references, which both contemplate the ability to distinguish packet formats after decoding header packets for information. For example, in Huang, the alleged receiver uses “correlation over data subcarriers between L-SIG and the symbol right after the L-SIG *after FFT processing*,” i.e., after decoding the wireless packet.⁴ INTEL-1005, 13:2-14 (emphasis added); Pet. 39-40. Huang

⁴ Indeed, Intel argues in its Petition for *inter partes* review of related U.S. Patent No. 9,584,262, that FFT (Fast Fourier Transform) processing *is demodulation* (or decoding). Pet. 27-28 (IPR2023-1143) (“A POSITA would have understood the collection of FFTs to be a demodulator.”). Intel’s expert agrees. *See* INTEL-1003, ¶¶48-49 (opining that IFFT and FFT transform functions correspond to a “modulator” and “demodulator,” respectively).

discloses that “if the correlation value is larger than a predefined threshold” then “repetition detection is passed.” INTEL-1005, 13:2-14; Pet. 39-40. In short, after FFT processing (i.e., decoding) Huang looks to the “number of available sub-carriers,” and if the number of subcarriers in the packet exceeds a specific value, then Huang concludes repetition exists. But this is no different than the ’146 patent where the value of D can be determined from the “number of available sub-carriers,” in a packet format, and decoded from a header field. *See* INTEL-1001, 2:58-3:11, 3:46-54.

Similarly, Intel later relies on the Sun reference’s disclosure that the client station “‘decodes’ the first and second OFDM symbols ‘to obtain respective first and second bit sequences’ and ‘compares ... the bit sequences to determine whether the candidate signal field 807 corresponds to the repetition.’” Pet. 69-70 (citing INTEL-1006, 9:47-52); *see also id.* 74 (“repetition detection disclosed by Sun is performed before (or during) decoding of the received data unit.”). Like with Huang, Intel thus *relies* on decoding OFDM symbols to read on the “detecting” step for the purposes of challenging the claims in Ground 2. *Id.* 69-70.⁵

⁵ As discussed above, this further underscores the fact that Intel is simply seeking the Board exceed its statutory authority under § 311 to find the claims invalid for lack of written description support under § 112. *See supra* Sec. III.

Because Intel's own selected prior art references do not exclude decoding of a header field as a way to detect header repetition and thus distinguish between packet formats, Intel's artificial narrowing of the claims should be rejected.

3. The '146 Patent Is Entitled to the Priority Dates of Its Ancestral Applications

Intel contends that “[t]he '146 patent does not provide any disclosure of detecting the presence or absence of a repeated header field to distinguish packet formats.” Pet. 15. But as discussed above, Intel's contention is based on an improper construction of the claims that would unduly narrow claim scope. *See supra* at Sec. IV.A.1. Moreover, Intel concedes that the '146 patent expressly discloses “distinguish[ing] between packet formats ... by decoding the packet to obtain the value of D.” Pet. 16. And by obtaining the value of D, the receiver is able to detect whether a second header field is present because the value of D represents the number of OFDM symbols. *See* INTEL-1001, 5:56-6:2, Fig. 1. The disclosure of this form of receiver detection of a repeated header appears in all patent applications from which the '146 patent claims priority. Thus, Intel cannot show that independent claims 1 and 6 lack written description support in the specification of the '146 patent based on the “detecting” limitation.

To explain, Figure 1 shows various header repetition formats that include various values of H (header types) and D (number of OFDM symbols):

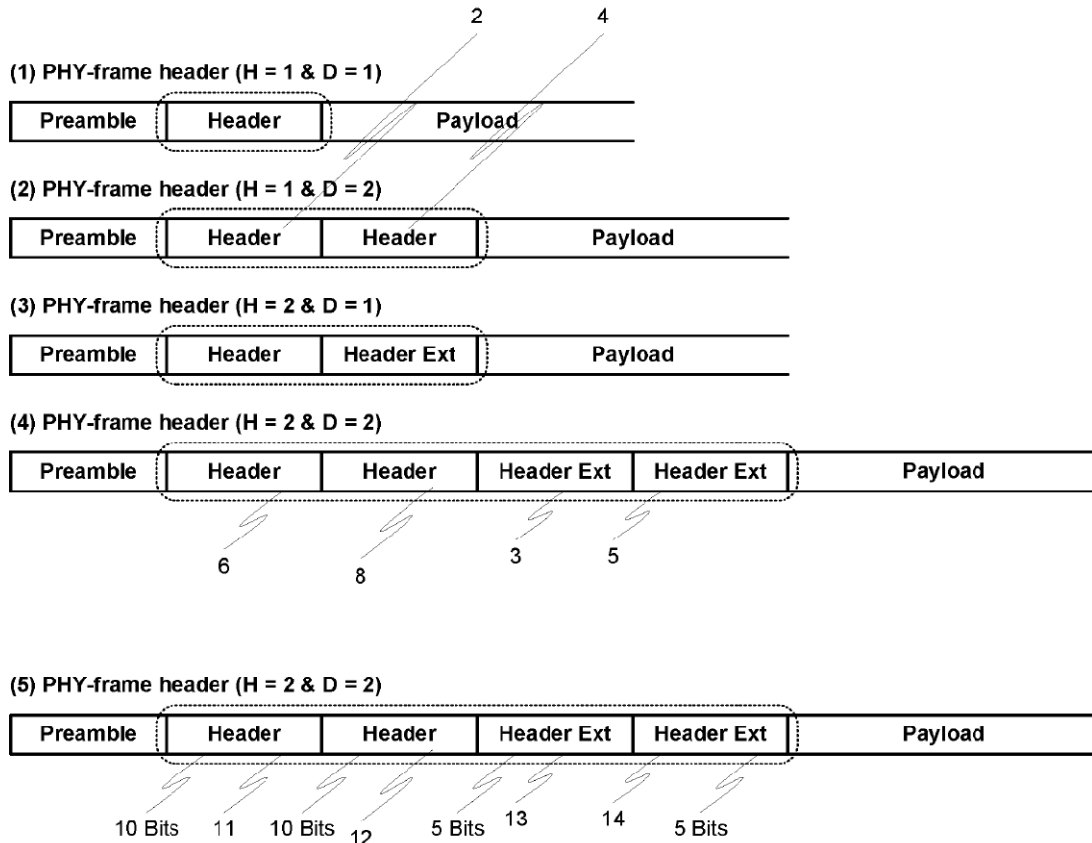


Fig. 1

INTEL-1001, Fig. 1; *id.* 2:37-45, 5:56-6:19. The specification explains that in the second example where H=1 and D=2, the packet format involves a preamble followed by a header 2 that is repeated as header 4, which is followed by the payload. *Id.* 5:59-63. Likewise, for the fifth example, the specification explains that where H=2 and D=2, the result is that “header 11 is repeated as header 12, and the extended header 13 is repeated as extended header 14, which is followed by the payload” data. *Id.* 6:3-7. A POSA would have recognized that the receiver is able to detect whether or not a second header field is present where D is greater or equal to 2 and distinguish between packet types on the basis of knowing the value of D. *See id.* 2:51-3:5; *see*

also id. 7:11-13, 7:28-38, 8:27-53, 9:8-24, 9:48-58, 9:66-10:6. In so doing, the invention is able to detect both when a header is exactly repeated, and when it is repeated in part. *See id.* 5:61-63 (“[T]he repeated header can be repeated in full or in part.”). By being able to detect when the second header field is repeated, by decoding the value of D, the receiver is thus able to distinguish between the various header repetition formats (i.e., autodetection), which Intel concedes. Pet. 16 (recognizing that the disclosed receiver in the ’146 patent can “distinguish between packet formats ... by decoding the packet to obtain the value of D”); *see* AXW-2001, ¶¶28-32.

The ’909 Provisional includes substantively the same disclosures as the portions of the ’146 patent specification describing receiver detection. *See* INTEL-1008, 5-6. First, the ’909 Provisional sets forth the invention’s variable header repetition scheme-based values of D and H:

5.1 Example of header repetition when $D, H = 1$ or 2

Figure 1 describes the header repetition scheme when $D, H = 1$ or 2 .

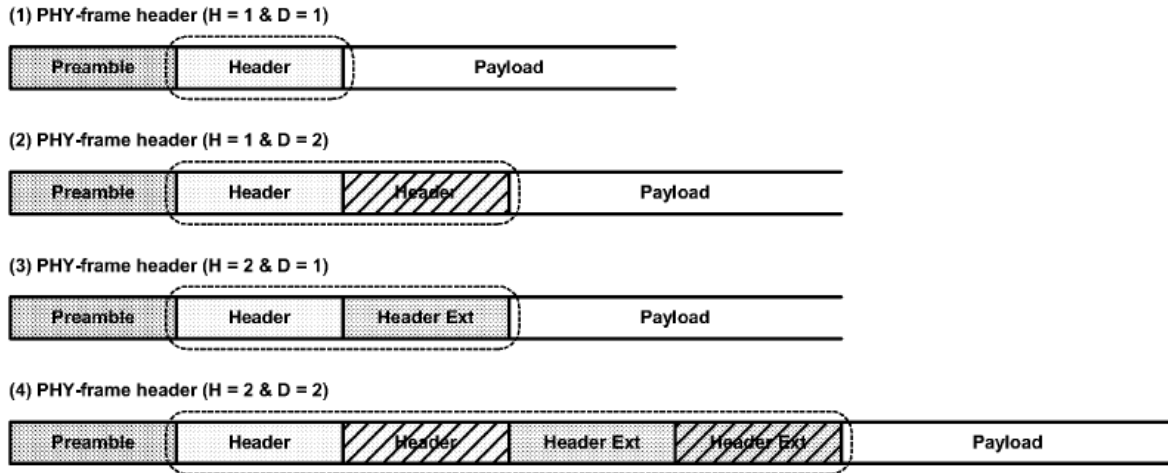


Figure 1: Header repetition scheme ($D, H = 1$ or 2)

INTEL-1008, 5 (describing the header repetition scheme). The '909 Provisional then continues to explain how “detection” by the receiver to determine a value for D , and thus distinguish between packet formats, is accomplished in two different exemplary methods:

5.2 Detection by receiver (variable repetition)

In this exemplary embodiment, the transmitter selects (or determines) at least one D value. This selection may be at its own discretion, or based on information communicated between one or more receivers, or based on instruction from one or more receivers. Selection may depend on the number of available sub-carriers (or the bandwidth) of the bandplan the transmitter operates on and/or the receiver(s) operates on. In this exemplary embodiment a receiving node in the domain should

be able to decode packets sent by the transmitter without knowing D a priori (i.e. prior to decoding the packet header).

One exemplary method is for a transmitter to carry the value of D in the header so that all nodes know how many OFDM symbols are carrying header information. The receiver starts processing the header by decoding one OFDM header symbol. If the receiver decodes it successfully, then it knows how many more OFDM symbols ($D-1$) carrying header information for a given frame. If the receiver fails to obtain header information out of one OFDM header symbol (i.e. the header decoding fails), then it can try to decode two OFDM header symbols, and so on. The decoding of each additional OFDM header symbol provides additional diversity thereby increasing the likelihood of decoding the header information correctly.

INTEL-1008, 5-6. The '909 Provisional thus explains how, in one embodiment that the "receiving node in the domain should be able to decode packets sent by the transmitter without knowing D a priori (i.e. prior to decoding the packet header)." *Id.* And in the second embodiment, the value of D is determined by successfully "decoding one OFDM header symbol," which in turn informs "how many more OFDM symbols ($D-1$) [are] carrying header information for a given frame." *Id.* As such, the '909 Provisional contains adequate written description support for "detecting, from the received wireless packet, the second header field which repeats the first header field." INTEL-1001, claims 1, 6; INTEL-1008, 5-6. In other words, based on these disclosures a POSA would reasonably conclude that "the applicant

possessed [the claimed invention].” *Medtronic*, 69 F.4th at 1354 (quoting *Ariad*, 598 F.3d at 1351); AXW-2001, ¶¶36, 38.

The 2010 Application likewise contains similar written description support for the claims of the '146 patent. AXW-2004, 4. Paragraphs 11 and 12 of the 2010 Application disclose substantively the same information as the '909 Provisional with respect to these two embodiments, explaining “receiver detection of D with variable repetition”:

[0011] *On[e] exemplary aspect is directed toward receiver detection of D with variable repetition.* More specifically, in accordance with this exemplary embodiment, the transmitter selects (or determines), ... at least one D value. The selection may be at its own discretion, or may be based on information communicated between one or more receivers, or based on instruction(s) from one or more other receivers and/or a domain master. Selection may depend on the number of available sub-carriers (or the bandwidth) of the bandplan the transmitter operates on and/or the receiver(s) operates on. ***In accordance with this exemplary embodiment, a receiving node in the domain should be able to decode packets sent by the transmitter without knowing D a priori (i.e. prior to decoding the packet header).***

[0012] *Another exemplary aspect* is for a transmitter to carry, insert or otherwise communicate the value of D in the header so that all nodes know how many OFDM symbols are carrying header information. ***The receiver(s) starts processing the header by decoding one OFDM header symbol. If the receiver decodes it successfully, then the***

receiver knows how many more OFDM symbols (D-1) are carrying header information for a given frame. If the receiver fails to obtain the header information from the OFDM header symbol (i.e., the header decoding fails), then the receiver can try to decode two OFDM header symbols, and so on. The decoding of each additional OFDM header symbol provides additional diversity thereby increasing the likelihood of decoding the header information correctly.

AXW-2004, 4. Thus, there can be no credible dispute that the 2010 Application, like the '909 Provisional, likewise conveys to a POSA that the inventor possessed claims 1 and 6 of the '146 patent. *Ariad*, 598 F.3d at 1351; AXW-2001, ¶39.

As Intel recognizes from the 2010 Application forward, the "'146 patent and its ancestor applications in the chain of priority share the same specification." Pet. 9 n.2. This includes U.S. Application No. 13/376,856, filed on February 8, 2012 and published on July 5, 2012 as U.S. Patent Application Publication No. 2012/0170625 ("2012 Publication"). AXW-2003. The 2012 Publication includes the same relevant descriptions as the 2010 Application on "receiver detection of D with variable repetition." *Id.* [0011], [0012]. Accordingly, the 2012 Publication includes sufficient written description support to show that the inventor of the '146 patent possessed the full scope of claims 1 and 6 as of that date. *Ariad*, 598 F.3d at 1351; AXW-2001, ¶39.

As such Patent Owner has met its burden of production under § 120 to establish entitlement to claim priority to its entire chain of ancestral applications,

dating back to August 2009, under the proper construction of the claims. Intel therefore cannot meet its burden of proof to show that Huang and Sun are prior art under pre-AIA § 102(b) as asserted in the Petition, as both Huang and Sun were filed with the Patent Office after the '909 Provisional and the 2010 Application. Pet. 2.

B. Because the '146 Patent Has Written Description Support in Its Ancestral Applications, Huang and Sun are Not Prior Art

As discussed above, the '146 patent is entitled to claim priority from the '909 Provisional (filed on August 21, 2009), as well as the 2010 Application (filed August 20, 2010) and the 2012 Publication (filed on February 8, 2012). *Supra* at Section IV.A.3; AXW-2001, ¶¶38-39. The earliest effective filing date for Huang, however, is October 30, 2015, with the filing of its Japanese Patent Application. INTEL-1005, Cover ("Foreign Application Priority Data"). Huang therefore is not prior art to the '146 patent. The earliest effective filing date for Sun is June 18, 2005, the filing of its U.S. Provisional Application. INTEL-1006, Cover ("Related U.S. Application Data"). Sun is likewise not prior art to the '146 patent. The Board should thus deny institution.

V. The Board Should Exercise Discretion to Deny Institution Under 35 U.S.C. § 314 and *Fintiv*

The *Fintiv* factors overwhelmingly support denial of this tardy Petition, filed just two weeks before the statutory deadline. Intel is undisputedly participating in the two parallel district court proceedings involving real parties in interest ("RPIs")

Dell and Lenovo (Pet. 78), and those two separate cases are moving rapidly towards two separate and complete jury trials that will take place in June and July 2024, nine and eight months, respectively, before any anticipated final written decision from the Board. *See* Factor 2 below.

Despite these looming trial dates, Intel gives *Fintiv* the back of its hand, with a conclusory assertion of “compelling unpatentability challenge” and relying on its RPIs’ late-filed venue motions. Pet. 77. Intel provides no authority or evidence showing the trials will not happen on schedule and fails to take into account median time-to-trial statistics. Even worse, Intel offers no stipulation whatsoever, despite the undisputed overlap between this IPR and the two district court litigations.

Accordingly, the Board should exercise its discretion and deny this tardy Petition under § 314(a), as all of the *Fintiv* factors favor denial.

A. Factor 1 (Stay) Favors Denial

Trial is imminent and no party has moved to stay despite the looming trial dates. Even if they had, courts in the Eastern District of Texas will not grant a stay in this situation. *E.g., MyPort, Inc. v. Samsung Elecs. Co.*, No. 2:22-CV-00114-JRG, Order at 4-5 (E.D. Tex. June 13, 2023) (Dkt. No. 73) (denying motion to stay pending instituted IPR proceeding “[g]iven the substantial amount of work and financial resources already poured into this case”); *Koninklijke KPN N.V. v.*

Telefonaktiebolaget LM Ericsson, No. 2:21-CV-00113-JRG, Order at 4-5 (E.D. Tex. July 7, 2022) (Dkt. No. 215) (similar).

Accordingly, this factor weighs in favor of denial, or is neutral at worst.

B. Factor 2 (Trial Date Proximity) Strongly Favors Denial

Petitioner Intel and the named RPIs will participate in *two* jury trials shortly after institution, weighing heavily in favor of denial.

First, the parties have proposed that the Dell trial begin in June 2024—about three months after institution, and *nine months* before this IPR's final written decision. AXW-2031 (Dec. 1, 2023 Proposed 4th Am. Dell Docket Control Order) 1.⁶ The Lenovo trial will be in July 2024, *eight months* before the final written decision. AXW-2018 (Oct. 31, 2023 3rd Am. Lenovo Docket Control Order) 1. Accordingly, this factor “weighs heavily in favor of discretionary denial.” *See Zhuhai Cosmx Battery Co. v. Ningde Ampere Tech. Ltd.*, IPR2023-00587, Paper 12 at 10-11 (Sept. 22, 2023).

⁶ The current trial date is set for April 15, 2024. AXW-2017 (Oct. 23, 2023 3rd Am. Dell Docket Control Order). For the purposes of this analysis, Patent Owner assumes the Court will grant the parties' joint motion for a Fourth Amended Docket Control Order.

Second, the same result is reached if considering the median time-to-trial statistics instead. The median time to a jury trial in the Eastern District of Texas before Judge Schroeder is just over thirty months. AXW-2020 (Schroeder milestones). The Dell litigation has been pending since June 2022, and thus even if the district court took thirty months to reach trial, the jury trial would occur in December 2024, three months before the projected final written decision date. Likewise, the Lenovo litigation has been pending since July 2022, and thus even if the district court took thirty months to reach trial, that date would fall in January 2025, two months before the projected final written decision date.

Although Intel argues that both deadlines are “tentative” in view of pending motions to transfer and improper venue filed by RPIs, Pet. 78, the district court has since denied Dell’s motion to transfer. AXW-2021 (Dell Docket Report) at Dkt. No. 142 (denying motion to transfer); AXW-2032 (Order denying Dell motion to transfer). And the Lenovo motion to transfer was filed late in the district court case on October 11, 2023, after the Court denied its motion to dismiss for lack of jurisdiction. *See* AXW-2022 (Lenovo Docket Report) at Dkt. No. 110 (R&R denying motion to dismiss); Dkt. No. 119 (adopting R&R); Dkt. No. 122 (motion to transfer). There is thus no reason to suspect that the court will grant Lenovo’s transfer motion. Further, Intel and the named RPIs have not asked the court to further delay either of the two trials, and there is no indication that it will. To the contrary, the parties have

proposed a new Docket Control Order in the Dell case requesting a June 10, 2024 trial date, and the district court just issued an amended Docket Control Order in the Lenovo case, confirming that trial will occur on July 15, 2024. AXW-2031, AXW-2018. The Board should reject Intel's invitation to speculate that the court will grant Lenovo's remaining late-filed transfer motion or otherwise further delay *both* of these two scheduled trials.

Accordingly, this factor strongly favors denial.

C. Factor 3 (Investment) Strongly Favors Denial

There is no dispute that the level of investment in the district court proceedings is already high and will be even higher at the time of institution. Given that the parallel district court cases are *both* at advanced stages, this factor weighs strongly in favor of denying institution.

In RPI Dell's case, claim construction briefing concluded on October 13, 2023, and the court held its *Markman* hearing on November 16, 2023. Fact discovery is set to close in February 2024, and expert discovery concludes in March 2024—the same time as any expected institution decision. *See* AXW-2017, AXW-2031. Contentions were exchanged on November 3, 2022 (infringement) and January 23, 2023 (invalidity), over six months before the Petition was filed.

In RPI Lenovo's case, the court likewise held its claim construction hearing on November 16, 2023, fact discovery closes in March 2024, and expert discovery

closes in May 2024. Contentions were exchanged on January 5, 2023 (infringement) and on March 2, 2023 (invalidity). AXW-2018. As such, both the district court and the parties will have invested heavily in the district court actions prior to any institution decision. Intel has no response, except its aforementioned speculation that trial will be delayed—which does not bear on this factor.

Intel's lack of diligence further favors denial. Intel waited until two weeks before its one-year deadline to file its challenge, instead of "expeditiously" filing its Petition, "such as promptly after becoming aware of the claims being asserted." *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 11-12 (Mar. 20, 2020) (precedential) ("*Fintiv*").

Accordingly, this factor favors denial.

D. Factor 4 (Overlap) Undisputedly and Strongly Favors Denial

Intel does not dispute the extensive overlap between this IPR and the two district court cases. Pet. 77-78 (not even mentioning factor 4). Indeed, the grounds in this Petition are identical to the invalidity challenges presented in the invalidity contentions for the Dell and Lenovo actions. *See* AXW-2023, 26-27. Petitioner's invalidity contentions in the Dell case include both Huang and Sun, and thus will also require the fact finder in the district court to determine whether the '146 patent properly claims priority from its ancestral applications (it does). *See id.* Intel is thus asking the Board to perform identical work to that in the district court, which raises

particularly strong “concerns of inefficiency and the possibility of conflicting decisions,” strongly favoring denial. *Fintiv* at 12. The risk here is particularly strong, as Petitioner’s priority challenge depends heavily on the Patent Owner’s early-stage infringement allegations based on public information. *See* Pet. 15 (arguing for a construction “consistent with PO’s allegations in district court”). But the district court will be in the better place to accurately assess Patent Owner’s infringement contentions on a full record at later stages in the litigation.

Further, Intel and its two named RPIs (Dell and Lenovo) have not offered any kind of stipulation to avoid duplicative proceedings. Accordingly, this factor undisputedly and strongly weighs in favor of denying institution under *Fintiv*.

E. Factor 5 Undisputedly Favors Denial

Petitioner Intel and RPIs Dell and Lenovo are undisputedly parties to, or at least participating in, the two Texas litigations. *See, e.g.*, AXW-2032, 10 (acknowledging that Intel is indemnifying Dell in the Texas litigation). Accordingly, this factor favors denial. Pet. 77-79 (not challenging this factor and admitting the Lenovo and Dell litigations are the relevant litigations).

Accordingly, this factor undisputedly favors denial.

F. Factor 6 (Other) Favors Denial

Other circumstances that favor denial are the merits and fairness. Neither one favors institution.

In particular, the merits of the Petition are weak for multiple reasons, as set forth in this preliminary response. As noted by the Director in *CommScope*, the standard for finding a compelling meritorious challenge “is a higher standard than the standard for institution set by statute.” *CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 at 3 (Feb. 27, 2023). Accordingly, even if the Board finds that Intel has established a reasonable likelihood of success, such a finding alone is not enough to warrant institution when balanced against the remaining *Fintiv* factors.

Accordingly, this factor favors denial.

* * *

The Board should deny institution under § 314(a) because all of the *Fintiv* factors favor, or strongly favor, denial.

VI. Conclusion

For the reasons set forth above, the Board should deny the Petition for *Inter Partes* Review.

Respectfully submitted,

Dated: December 11, 2023

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I hereby certify that this Patent Owner's Preliminary Response complies with the word count limitation of 37 C.F.R. § 42.24(b) because the Patent Owner's Preliminary Response contains 6,922 words using Microsoft Word's counting feature, excluding the cover page, signature block, and the parts of the Patent Owner's Preliminary Response exempted by 37 C.F.R. § 42.24(b).

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), I certify that on this 11th day of December, 2023, a true and correct copy of the foregoing **Patent Owner's Preliminary Response and all Exhibits** were served by electronic mail on Petitioner's lead and backup counsel at the following email addresses:

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